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ABSTRACT

A study examined communication selection within virtual organizations and the effects of these media. The subjects, who were 681 participants from 3 separate virtual organizations that used face-to-face communication, telephone, documents, voice mail, and electronic mail, completed a survey instrument. Follow-up interviews were conducted with key contacts within each organization. Results indicate that: (1) electronic communication media are the norm within virtual organizational contexts; and (2) these electronic media have a significant impact on how employees communicate. Although electronic media have the ability to make the communication process faster, allow direct communication among all levels in the organization, and provide immediate feedback, they also have potentially negative effects on freedom of expression among employees. The survey instrument is attached. (Contains 34 references and a table of data.) (RS)

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Dictating Modes of Communication: How Communication Media Usage Norms Limit Freedom of Expression in Virtual Organizations

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ABSTRACT

The present study examines communication selection within virtual organizations and the effects of these media. The author finds 1) electronic communication media are the norm within virtual organizational contexts, and 2) these electronic media have a significant impact on how employees communicate. Although electronic media have the ability make communication faster, allow direct communication among all levels in the organization, and provide immediate feedback, they also have potentially negative effects on freedom of expression among employees.

A variety of communication media are used within every organization. How a person selects an appropriate communication medium within an organizational context, however, is dependent upon a variety of factors. These factors include: (a) The medium's ability to resolve ambiguity, also known as its relative richness; (b) the symbolic meaning of the medium; (c) personal preference; and (d) the social context. The present study focuses on the effects of one particular social context, the virtual organization, on communication media selection.

Numerous studies have shown that organizations have cultural norms for which communication media are to be used in different situations (e.g., Fulk, Steinfield, Schmitz & Power, 1987; Markus, 1994). These norms vary from organization to organization. However, virtual organizations tend to use similar communication media. Virtual organizations are commonly defined as organizations in which at least some of its members work from remote locations and these employees are enabled to work together through the use of advanced communication technologies (Mayer-Guell, 1999). Given the nature of this definition, virtual organizations often have norms prescribing the use of electronic communication media such as voicemail and electronic mail in order to enable remote workers to collaborate with each other.

The purpose of the present study is two-fold. First, the present study will determine if, indeed, the virtual organization context impacts an employee's communication media selection (i.e., Do virtual organizations encourage the use of electronic communication media?). The second aim of the present study is to examine the impact these (presumably) electronic communication media have on employee communication.

According to current research, the use of electronic communication media has many potentially beneficial effects. Some of these beneficial effects include: Higher levels of organizational identification among virtual workers (Mayer-Guell, 1999), less filtering of

information between employees and management (Huseman & Miles, 1989), faster communication and a leveling of the playing field among all organizational members (Rogers 1996). But are all of the effects of using electronic communication positive? The present study argues that no, not all of the effects of electronic communication are positive. The primary negative effect of electronic communication media may be their tendency to silence employee voices by limiting their means of expression. Therefore, not only does the virtual organization context impact the types of communication media used, but it also limits the freedom of expression of organizational members.

Communication Media Selection and Usage

Media Richness

A great deal of research has been conducted on why individuals choose to use certain communication media. Much of this research centers on how communication media differ in their capacities to covey certain types of messages in certain situations. Mintzberg (1973) found that managers prefer verbal, face-to-face communication. However, his research did not suggest reasons for this preference.

One of the first attempts at explaining why individuals prefer specific media was Short, Williams and Christie (1976). These researchers found that media differ in their social presence, the extent to which a communication medium is able to convey sociability, warmth, personalness, and sensitivity. Face-to-face communication has the most social presence, followed by videoconferencing, telephone and print. Managers, therefore, may resist electronic communication and favor face-to-face communication because of the important social cues they are able to convey with the latter medium (Daft, Lengel & Trevino,1987).

Beginning in the mid-1980s, Richard Daft and Robert Lengel built upon the work of Short, Williams and Christie (1976) by developing what is known as the media richness model. According to this model, media have varying capacities to resolve ambiguity, meet interpersonal needs and transmit data (Daft & Lengel, 1984). The more capacity that a medium has, the "richer" it is. Likewise, a medium with less capacity is considered a "leaner" medium. Specifically, these researchers suggested four criteria for determining a medium's relative richness or leanness:

1. Availability of instant feedback (instant feedback allows communicators to come to a common understanding in a limited amount of time).
2. Utilization of multiple cues (a medium is considered richer when it uses multiple cues such as nonverbals to convey feelings and interpretations).
3. Use of natural language rather than numbers to convey subtleties.
4. Personal focus (a medium is considered richer when the sender can personalize the message taking the needs and frame of reference of the receiver into account and infusing the message with personal feelings and emotions) (Daft et al., 1987; Trevino, Lengel & Daft, 1987).

Based on these criteria, all media can be placed on a rich/lean continuum (Daft & Lengel, 1984, 1986; Daft et al., 1987; Trevino et al., 1987). The media richness model places face-to-face communication at the richest end of the continuum, followed by the telephone, personally addressed documents and unaddressed documents. To this continuum, Steinfield and Fulk (1986) added email between the telephone and written documents. They argued that email belonged at this location since, unlike written documents, it provides rapid feedback and uses natural language, but it lacks important cues such as voice inflection, pitch and tone that are

available with the telephone. Mayer-Guell (1999) argued that one could also add voicemail to the media richness continuum between the telephone and electronic mail.

Daft et al. (1987) used the media richness model to explain why managers choose specific media. They found that high-performing managers choose appropriate media based on the ambiguity of the message or communication situation (Daft et al., 1987; Kriebel and Strong, 1984). In a more ambiguous situation, such as for non-routine tasks, managers were more likely to choose a richer medium such as face-to-face communication. In a less ambiguous situation, such as performing routine tasks, a leaner medium like email or teleconferencing was more appropriate (Trevino et al., 1987).

The types of decisions made by senior managers are inherently ambiguous and therefore require rich communication media like face-to-face communication. Face-to-face communication has the ability to communicate the type of decisions made by senior management (Daft et al., 1987). Daft et al. (1987) stated, "While the face-to-face medium is weak and inefficient for processing data or resolving objective problems, it is a powerful medium for transferring multiple cues, enabling rapid feedback among several managers, and attaining social support for enacting solutions to equivocal problems" (p. 363).

Recent research on media selection found that the use of richer media is positively related to task variety and negatively related to task analyzability (Christensen & Bailey, 1997; Donabedian, McKinnon & Burns, 1998). If a task is unusual or different, a person is more likely to use a richer medium, while if the task is one that is easily analyzable, a person is more likely to use a leaner medium.

The Medium as Message

Some research on communication media indicates that people also make their medium selection according to the symbolic meaning attached to the medium. According to Trevino, Lengel & Daft (1987), communication media have symbolic meanings that transcend a particular message. For this reason, a medium may be selected for its symbolic meaning as much as for its ability to solve more or less ambiguity. As Trevino et al. (1987) stated, "The medium itself is a message" (p. 559).

Because of the symbolism attached to a medium, the same explicit message may have different meanings depending on which medium is used. For example, during a layoff situation, a manager would most likely get a very different response using face-to-face communication than he or she would use email. Letting someone know via email that he or she is going to be laid off would appear cold and harsh. The same message conveyed through face-to-face communication would still be a difficult message, but the personnalness of the medium might soften the blow.

In addition, media often have meaning over and above their explicit message. For example, a subordinate who wants to appear technically competent may choose to use electronic communication to convey a weekly status report to his manager. In contrast, if an employee wants to develop more of a personal relationship with his or her manager, he or she may choose to deliver the status report face-to-face.

Social Context

The social context often has a profound impact on media selection and usage. Within an organization, members' media choices may be affected by contextual factors and previously agreed-upon symbols. Their choices may be constrained by factors such as distance, expediency,

structure, role expectations, organizational culture and time pressure (Fulk & Boyd, 1991; Steinfield & Fulk, 1986; Trevino et al., 1987). For example, according to research by Steinfield and Fulk (1986), people under time pressure are more likely to use the telephone regardless of ambiguity, and those who are geographically dispersed are more likely to use electronic mail. On the other hand, certain contextual variables such as availability and access to specific media may expand a person's media choices.

Media characteristics alone cannot explain contextual influences on media use. Therefore, Fulk, Steinfield, Schmitz and Power (1987) used social information processing theory to attempt to better explain media selection and usage. Social information processing theory states that meaning is socially constructed. These authors asserted that information provided by the social environment is as important as media characteristics and workplace constraints in media selection.

In support of their claim, Fulk, Steinfield, Schmitz and Power (1987) noted that there is similar media usage among groups of workers, media use across groups varies and there is often a mismatch between task and media selection. In other words, the choices made by those around an individual also impact that individual's media choices. Steinfield and Fulk (1986) found that the extent to which a subject's co-workers used email was an important predictor of whether or not the individual would use email. Fulk et al. (1987) stated that an employee's pattern of email usage was best predicted by his or her supervisor's pattern of email usage rather than features like accessibility and perceived utility.

Communication Media Selection in Virtual Organizations

The culture of an organization often dictates norms for which communication media are to be used in particular situations. For instance, the norm in one organization may be to send all

messages, with few exceptions, via email regardless of the ambiguity or the message. In another organization, voicemail may be the medium of choice, with email playing a far less important role.

The role of social context in communication media selection and use is especially important in the study at hand. The virtual organizational context has substantial effects on communication patterns including media selection. In a traditional context, where most employees are located in a centralized office, an organization can rely heavily on face-to-face communication and other visual and verbal media to instill organizational norms and decision-making premises.

However, in a virtual organization, employees lack spontaneous and/or informal opportunities for conversations. There is no "water fountain" to gather around and, hence, little opportunity for newcomers to ask questions about the fundamental ideology of the organization in a relaxed setting. Most virtual organization communication will be more formal in nature, since it favors written, non-spontaneous communication. There will be relatively little social communication as there is in a "normal" organization where people stop by each other's offices, have lunch together, or even meet in the hallways to communicate. Virtual organizations must rely on relatively leaner communication media such as email or voicemail since their employees are working from remote locations. In virtual organizations, employees may select their communication medium based on its availability or convenience rather than using a medium that is appropriate to the situation and/or its level of ambiguity. Therefore, the present study proposes that virtual organizations will have communication media norms encouraging the use of electronic communication media rather than richer, non-electronic media.

Potential Benefits of Electronic Communication Media

Electronic communication media such as voicemail and electronic mail can have many positive effects. One of the primary benefits of electronic media is speed of communication. A person can get a message to another employee in a matter of minutes via electronic communication media whereas if delivering the message face-to-face, the employee would have to locate the other person and spend time traveling to his or her location. Feedback is also much more rapid with electronic communication. Rather than having to wait for days or weeks for a reply to one's letter, one may receive a reply in only the time it takes the respondent to notice and read the message, write a reply and hit the "send" button on his or her electronic mail system. Communication speed can be even greater with the use of the Internet that allows simultaneity. The Internet allows groups of individuals to communicate with each other on-line at the same time.

Electronic mail also has the added benefit cutting down social barriers between people (Rogers 1996). In his study of homeless people's use of email in the city of Santa Monica, Rogers found that homeless people and homed people of various classes communicated on a more even playing field when using email. Email, therefore, blurs socially constructed issues of class, status and race and gives voice to all.

The ability of electronic communication media to cut down barriers among the various levels within an organization is enhanced by the fact that these media can be used anonymously (Chidambaram & Jones, 1993; Kiesler, 1986). No one has to know whom a message is from thereby eliminating the nonverbal communication supplied by position and authority. In addition, given the benefits of anonymity and simultaneity, Chidambaram and Jones (1993)

predicted that a group with proper facilitation communicating via email, "can improve their productivity by minimizing disruptive behavior and maintaining their focus on the task at hand" (p. 484).

Along with breaking down barriers, electronic communication media also function to eliminate filtering of communication between various levels in the organization (Huseman & Miles, 1988). When using traditional communication media such as face-to-face communication or written documentation, an employee at a lower level in the hierarchy would have to write or talk to his or her direct supervisor about an issue who, in turn, would talk to his or her supervisor, continuing up the chain of command. During this process, the original message may become distorted due to miscommunication or editing for political or personal reasons. When using electronic communication, a lower level employee can eliminate this filtering effect by sending his or her message directly to upper management. In this way, electronic communication media can give voice to employees who previously were not heard.

All of the positive elements of electronic communication media mentioned above led Romm and Pliskin (1997) to conclude that electronic communication media are politically potent. In addition to the characteristics already mentioned, these researchers note the following as contributing to the political potency of electronic communication:

1. Multiple addressability: The sender can have the electronic message delivered to a large number of people at the same time.
2. Ability to be processed and retransmitted by the receiver: After receiving a message, a person can rewrite it or add political comments to it and then resend it.
3. Routing: A sender can choose to transmit slightly different messages to different groups by controlling the receivers to whom each message is routed.

Potential Drawbacks of Electronic Communication Media

Unfortunately, not all of the effects of electronic communication media are positive; there are some drawbacks. One of the primary drawbacks of using electronic communication media is that these media do not incorporate as many non-verbal cues as do their richer, non-electronic counterparts. For example, with the use of email, almost all nonverbal communication is eliminated except that which is signaled through the use of emoticons (e.g., : -), <G>, : - (, etc.). Even with richer electronic communication media like videoconferencing, cues such as body language and nonverbal messages like mutual gaze are restricted (Argyle & Cook, 1975). Due to these restrictions, videoconferences and other electronic messaging are often less emotional than face-to-face communication and therefore may be better suited to the exchange of explicit information (Dutton, Fulk & Steinfield, 1982; Strickland, Guild, Barefoot & Patterson, 1978; Williams, 1978). These same media may be less well suited to highly ambiguous situations.

Another drawback of using electronic communication (especially leaner electronic media such as email and voicemail) in an organizational context is that shared meanings must already exist (Trevino et al., 1987). Communicators must have a common understanding of what words mean, how the organization works and how decisions are to be made in order for leaner electronic communication media to be used effectively. Otherwise, it would be more appropriate to use richer, non-electronic media such as face-to-face communication. This is especially true for newcomers to the organization or when members of different organizations are trying to work together on complex or ambiguous tasks. The problem, however, is that in the virtual organization context, employees may not have a choice as to whether or not to use electronic communication. It may be their only means of communication or at least the mode preferred within the organization.

The preference for electronic media in a virtual organization has additional drawbacks for individuals who have computer anxiety. Many individuals have anxiety related to using the computer for interacting with others (Flaherty, Pearce & Rubin, 1998). According to a study by Scott and Rockwell (1997), computer anxiety is related to a variety of new electronic communication technologies although it is most strongly related to phone-based technologies (oral communication tools). Therefore, individuals who are apprehensive about using new electronic communication media may be at an additional disadvantage when they are put in the virtual organizational context where non-electronic communication media may not be feasible options.

Another potential drawback of electronic communication media is that they enable a new form of surveillance within organizations. According to Hays (1999) a recent survey conducted by the American Management Association concluded that nearly two-thirds of employers monitor employee voice-mail, e-mail, phone calls and computer files. Internet sites visited are also monitored as well as how long an employee stays on each site.

There are a number of possible reasons for this surveillance. The first reason that organizations are employing electronic surveillance techniques is to protect themselves from liability. Even though the Supreme Court stuck down parts of the Communications Decency Act of 1996, administrators of information systems are still responsible for ensuring decency on the Internet according to the part of the act left in tact (Whitman, Townsend & Aalberts 1999). Therefore managers must protect their organizations from liability by limiting employee misuse of the Internet and other communication technologies through the use of surveillance.

Organizations are also using surveillance techniques as a means of control and coordination. With the advent of virtual organizations and new communication technologies,

organizations have lost their traditional means of control and coordination--supervision. In non-virtual organizations, managers could monitor their employees and the progress of their employees by walking around and observing them. Now, with the advent of new communication technologies, control through supervision is no longer possible. Therefore, organizations are trying to ensure organizational control through other means.

One means by which to ensure organizational control is to increase organizational identification (Barker, 1993). Organizational identification was defined by Johnson, Johnson and Heimberg (1999) as "a process of internal and external persuasion by which the interests of an individual merge with the interest of an organization, resulting in the creation of identifications based on those interests" (p. 2). Organizational identification provides employees with common attitudes, beliefs and decision-making premises; it is a process as well as a product (Tompkins & Cheney, 1983). Through the process of organizational identification, an employee learns how decisions are to be made; the decision-making premises of the organization as a whole and the individual converge. Because of this convergence, organizational identification provides the backbone of control in an organization, allowing an organization to coordinate its members and move towards common goals. As Wilson (1999) states, "A sophisticated level of control emerges out of the corporate need for workers to identify themselves with the virtual organization, to be loyal, committed and thus self-directed or self-controlled" (p. 688). The more an individual identifies with an organization, the more likely he or she is to make decisions that are consistent with the organization and act in a manner consistent with organizational behavioral norms.

Another means by which to ensure organizational control is through electronic surveillance. Electronic surveillance is an extremely effective means of control due to its

panopticon effect as described by Foucault (1977). Workers are put in a position where they know their behaviors and communication can be monitored. Even though they can't see the person observing them there is always the possibility that they are being watched and therefore, there is always control.

Unfortunately, in their attempt to maintain control and coordination, organizations may be limiting the communication patterns of employees and their freedom of expression. Ideally, electronic communication media should give voice to all levels of employees, but organizations may be taking this benefit away by dictating which communication media can be used and then monitoring those channels.

According to Hays (1999), rights of expression are often limited in organizations despite the current organizational emphasis on employee empowerment. Using electronic surveillance limits an employee's freedom of expression. When employees are afraid to express their opinions for fear of losing their jobs, they often exhibit low morale and resentment. These attitudes and feelings, in turn, may limit the productivity and empowerment of an organization's workforce. Therefore, the present study's aim to determine if the requirement of electronic communication media usage limits the freedom of expression becomes even more important; not only can organizational communication norms limit freedom of expression, but in doing so they can also limit organizational productivity.

METHOD

Organizations and Participants of Study

The present study had a total of 681 participants from three separate organizations. (344 participants were from Organization A, 221 participants were from Organization B, and 116 participants were from Organization C). All three organizations are virtual organizations that use a variety of communication media including: Face-to-face communication, telephone, documents, voicemail and electronic mail.

Organization A is a worldwide management consulting firm. I obtained permission to use all members of five particular "communities" within the selected firm. All communities have approximately 150 people and are led by a senior partner of the firm. The community structure is composed of consulting employees of all levels and is centered around a particular competency such as change management, technology, process, project management, etc.

The communities I studied ranged in size from 128 to 155 people. All of the communities of study work out of the same large metropolitan area in the southern United States. However, their members work on jobs all over the United States as well as on engagements in other countries. Each community comes together a few times every year for all-community meetings and interactions frequently at multi-community social events.

The second organization of study, Organization B, is the consulting division of a software company that develops, sells and installs supply-chain management software for large manufacturing organizations. The organization is very young; its founder, now the CEO, started the company a little over 10 years ago in his apartment. Since that time, the company has grown dramatically. In 1996 the company went public and since then the price of its stock and its number of employees have increased exponentially. Currently it has well over 2000 employees

and is headquartered in a large metropolitan area within the south-central region of the United States.

At the time of study, there were 466 employees in the consulting division. The primary responsibility of the consulting division is to install the company's software for large manufacturers. This installation involves a great deal of customization; many customer-specific data points must be inputted into the software. Consultants work at client sites to gather the pertinent data and then input this data into the computer code.. The consultants ensure that the software works properly and arranges all necessary training for client personnel. In addition to the consulting staff, this division is also composed of a number of support personnel. All members of the division were asked to participate in the present study.

Organization C is a group within a major software development company headquartered in the northwestern region of the United States. The group involved in the present study had 130 members at the time of study but is growing at a very fast rate. The group of study does consulting for large organizations that use a number of the organization's products.

Study Design

The present study was conducted using survey research and follow-up interviews. The survey instrument was an on-line questionnaire. The on-line questionnaire used in the present study was customized for each organization and put on three separate Internet sites (one for each organization of study). Participants were asked to go to the appropriate Internet site and fill out a questionnaire on-line. Those participants who completed the questionnaire within a certain timeframe were entered in a prize drawing. Participants could also choose to fill out a paper copy of the questionnaire. The response rate for Organizations A and B was 50%. The response rate for Organization C was 89%. The overall response rate was 54%.

After the survey was completed, follow-up interviews were conducted with key contacts in each organization in an attempt to make additional sense out of the data and confirm findings. The follow-up interviews were informal in nature.

Measurement

The survey questionnaire used in the present study included measures of communication media usage and organizational identification. Communication media usage scores for face-to-face communication, telephone, documents, voicemail and electronic mail were computed by averaging the responses to three questions. This method was used previously used by Weisenfeld, Raghuram and Garud (1998). For each communication medium, the participants were asked:

1. In the past week, how often did you use (medium) for communicating with your superiors?
2. In the past week, how often did you use (medium) for communicating with your peers?
3. In the past week, how often did you use (medium) for communicating with your subordinates?

Participants answered each question using a scale from 1 to 5. A score of 1 indicated that the participant very rarely or never used that communication medium; a score of 5 indicated that the participant very frequently or always used that medium. Participants could also select "not applicable" in the case that they did not have superiors, peers or subordinates.

Participants were assigned an averaged score for each communication medium. The reliabilities for these scores were respectable. The reliability for face-to-face communication was .82 ($\underline{N}$ = 338), the reliability for telephone was .76 ($\underline{N}$ = 344), documents had a reliability of

.87 (N = 390), voicemail had a reliability of .89 (N = 347), and the reliability for email was .78 (N = 346).[1]

The present study also measured each participant's level of organizational identification. The instrument used to measure organizational identification was a 17-item version of the Organizational Identification Questionnaire (OIQ) developed by Cheney (1982).[2] For each of the 17 scale items, participants were asked to respond on a scale of 1 to 5 with 1 indicating strongly disagree and 5 indicating strongly agree. Each participant's organizational identification score was computed by averaging the totals for all items.[3] The reliability of this scale was .91 (N = 681). In addition, the sale was very unidimensional; all items were correlated with each other. The correlation coefficients for scale items ranged from .15 to .64 (N = 681); all were significant at the $p \leq .01$ level.

Research Questions

The present study focuses on two research questions. These questions are as follows:

Research Question #1: Do virtual organizations employ communication norms dictating the use of electronic communication media?

Research Question #2: What effects do electronic communication media have on freedom of expression for employees?

DATA ANALYSIS AND DISCUSSION

Research Question #1

[1] Reliabilities could only be computed using approximately half of the participants on each variable scale since many claimed that the question was not applicable due to the fact that they did not have subordinates, superiors or peers.

[2] A copy of the Organizational Identification Questionnaire items can be found in Appendix A.

[3] Two items of the questionnaire were reverse scored.

Research Question #1 was tested by computing correlations between each of the communication media usage variables of study and organizational identification. Organizational identification, as described earlier, is the extent to which an individual's beliefs and values converge with those of the organization. The greater the extent to which these beliefs and values converge, the greater that individual's level of organizational identification. When an individual has higher levels of organizational identification he or she is more likely to make decisions that are consistent with the organization's mission and vision and behave in ways consistent with organizational norms.

For the purpose of the present study, organizational identification is of interest since a person with a higher level of organizational identification would be more likely to use the communication media dictated by organizational norms. Therefore, one would expect that higher levels of organizational identification would be correlated with greater usage of the organizationally preferred modes of communication. The correlations between each of the communication media usage variables and organizational identification are listed in Table 1.

For each of the organizations of study, at least one communication media usage score was significantly correlated with organizational identification. In Organization A, voicemail and telephone usage were positively correlated with organizational identification. Since voicemail usage is more highly correlated with organizational identification than is telephone usage, we can conclude that voicemail is the communication medium of choice within that organization. Follow-up interviews with persons from Organization A confirmed this finding.

In Organization B, four of the five communication media were correlated with organizational identification at a significant level. However, the greatest correlation coefficient

Table 1

Correlation between Communication Media Usage and Organizational Identification for Three Organizations of Present Study

Communication Medium	Organization A N = 343	Organization B N = 221	Organization C N = 116
Electronic Mail	.10	.28**	.20*
Voicemail	.24**	.18**	.08
Face-to-Face	.02	.14*	.15
Telephone	.17**	.13*	.12
Documents	.02	.12	-.08

* $p \leq .05$ level.
** $p \leq .01$ level

was with electronic mail usage. Follow-up interviews with members of Organization B confirmed that email is the communication medium of choice.

Organization C's communication medium of choice is also email. In Organization C, email was the only communication medium significantly correlated with organizational identification. A follow-up interview with a key informant in Organization C confirmed this conclusion.

Since all three virtual organizations of study have electronic communication media as their communication media of choice (voicemail or email), we can conclude that virtual organizations do have norms favoring the use of electronic communication media. Therefore, the answer to Research Question #1 (Do virtual organizations employ communication norms dictating the use of electronic communication media?) is yes.

Research Question #2

Research Question #2 (What effects do electronic communication media have on freedom of expression for employees?) was explored through the use of follow-up interviews. After the data collection for the present study was completed, the researcher sent results to a key contact within each of the organizations. The researcher then met or spoke over the telephone with each of these contacts to confirm the findings of the study and probe for additional information. Contacts were asked to help explain why certain media were used in particular situations and what the norms were in their organizations for communication media selection and usage.

The interviews conducted with the key contacts confirmed the findings of research question #1. However, these interviews also revealed information pertaining to the effects of using electronic communication media in organizations.

An interview with a contact from Organization A revealed that members of Organization A have to be experts at using the voicemail system in order to survive and succeed in that organization. Employees of Organization A communicate with their colleagues primarily through voicemail. Email is not used as extensively because all consulting employees in the first level (the analyst level) do not have laptop computers and therefore do not have easy access to the email system. Face-to-face communication is used more often in Organization A than in the other organizations of study due to the team-based nature of their consulting projects. Although the organization is "virtual", most projects involve three or more consultants working together at a client site. The consultants on the project team would communicate with each other face-to-face, but communication with other members of the organization would typically be done via voicemail.

Employees learn early on in their careers to be very careful when leaving a voicemail message, because it will almost always be forwarded on to a large number of people (depending on the importance of the message). Employees are constantly being evaluated and critiqued in the culture, so even how well the employee is able to communicate via voicemail may be included on formal written evaluations.

The key contact from Organization A relayed a common experience she had when working with younger consultants. Since project teams often had to work in tight quarters, sometimes even from the same desk, she often overheard these young consultants recording voicemail messages. She described how they would write out, word for word, the message they were about to read into the phone. They would often rewrite the message many times before actually recording it. When they did record it, they would have a number of "takes" until they got the message just right. The culture of the organization dictated that 1) important messages

should be sent via voicemail so that everyone would be sure to get it (voicemail was the common communication medium) and 2) all voicemail messages should be error free.

When asked to compare communication via voicemail to communication face-to-face in the organization, the contact said there were some considerable differences. One primary difference was in the degree of formality. Employees tended to be more formal on voicemail especially if the message was going to be sent to a group of people rather than just to one individual. The other primary difference was in degree of comfort in asking questions. The contact believed that employees were more likely to ask a question face-to-face than over voicemail if at all possible. She thought the reason for this was that if the question were judged to be "stupid" there would be no formal record of the employee asking it. Whereas, if he or she had put it on voicemail or email, there would be a record of the question and of the employee's apparent incompetence.

The interview with the contact from Organization B also confirmed that organization's preferences for communication media. In that organization, email was the preferred mode. As in Organization A, Organization B's employees also had some hesitations when using electronic communication media. The contact informed me that employees were very careful when writing email since they knew the email could be forwarded on, and also because the email was archived. This meant that someone could search email from months or even years before. The record of their statements/opinions/questions would be preserved possibly long after they were gone. Therefore, employees put considerable thought into email rather than just typing something out very quickly and shooting it off.

The contact from Organization B also told the story of how email had been used against an employee. Apparently, an employee had sent an email to an internal group of people

expressing his ideas about and disagreements with a current project. Months later the email was read by a senior manager and the employee was seriously reprimanded. The contact thought that the employee might have even lost his job because of that email. This story was apparently told throughout the organization. What the story tells us is the value of electronic mail in the organization and how it is to be used. Email is highly valued, but employees are held accountable for everything written in them. Therefore, employees have to be very careful about how they word their messages.

An interview with the contact from Organization C also confirmed the findings from Research Question #1. Organization C's preferred mode of communication is also electronic mail. In fact, the contact stated that electronic mail is the only communication medium to which most employees pay attention. Messages sent via other communication channels, even other electronic channels, are often ignored or even deleted on arrival. Employees quickly learn that if you want your message to be received, you send it via email. Organization C also values quick, concise messages. Anything less is viewed as a waste of the receiver's time and energy.

When asked whether or not email limited the amount of communication or the content of communication messages, the contact replied yes. The reason for this response, he explained, is that any recorded message, particularly email can be subpoenaed during litigation. Currently, the organization is involved in highly publicized litigation and has had portions of its email archive confiscated by the legal system. Because of this, employees are very careful about what they write in an email message. They take extra care to ensure that it cannot be taken out of context and used against the company.

What all three of these interviews revealed is that employees exercise self-censorship when using electronic communication media. Employees, worried about their messages being

forwarded to a large number of people or concerned that their words will be used against them at a later date, take great care when communicating via electronic communication media.

One interviewee also mentioned that electronic media may limit those employees who are uncomfortable with the communication medium of choice. The contact from Organization A mentioned that some employees were uncomfortable with using voicemail, but that the organization did not allow them to use other media that they would have made communicating easier for them. Therefore, the organization may be limiting the freedom of expression of these individuals by limiting their communication media choice to a medium that they're incapable of or at least unskilled at using.

CONCLUSIONS

Electronic communication media are essential to the efficient functioning of virtual organizations. They allow people in remote locations to communicate with one another and work together. Although these communication media afford us the benefits of additional speed and information, their downside is that they may limit employee voice by encouraging self-censorship and restricting one's means of expression. Electronic communication media, therefore, may work against current empowerment trends in organizations. As virtual organizations become more and more common and the use electronic communication media becomes more of a necessity, we must understand the effects of these media. The present study is a step in that direction.

APPENDIX A: ORGANIZATIONAL IDENTIFICATION QUESTIONNAIRE (17-ITEM VERSION)

Instructions: For the following questions, think of your role as an employee of Organization. For each question, select the response from the scale below that best represents your belief or attitude toward Organization.

I agree *strongly* with the statement.
I agree with the statement.
I neither agree nor disagree with the statement.
I disagree with the statement.
I disagree *strongly* with the statement.

After reading each item carefully, please circle/select your response from the five items following it. Please respond to all items.

	Agree strongly	Agree	Neutral	Disagree	Disagree strongly
1. I am very proud to be an employee of Organization.	1	2	3	4	5
2. Organization's image in the civic community represents me as well.	1	2	3	4	5
3. I am glad I chose to work for Organization rather than for another company.	1	2	3	4	5
4. I talk up Organization to my friends as a great company to work for.	1	2	3	4	5
5. In general, I view Organization's problems as my own.	1	2	3	4	5
6. I am willing to put in a great deal of effort beyond that normally expected in order to help Organization be successful.	1	2	3	4	5
7. I become irritated when I hear others outside Organization criticize the company.	1	2	3	4	5
8. I have warm feelings toward Organization as a place to work.	1	2	3	4	5
9. I would be quite willing to spend the rest of my career with Organization.	1	2	3	4	5
10. I feel that Organization cares about me.	1	2	3	4	5
11. The record of Organization is an example of what dedicated people can achieve.	1	2	3	4	5
12. I find it difficult to agree with Organization's policies on important matters relating to me.	1	2	3	4	5

13. I find that my values and the values of Organization are very similar.	1	2	3	4	5
14. I feel very little loyalty to Organization.	1	2	3	4	5
15. I would describe Organization as a large "family" in which most members feel a sense of belonging.	1	2	3	4	5
16. I find it easy to identify with Organization.	1	2	3	4	5
17. I really care about the fate of Organization.	1	2	3	4	5

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